

WHAT IS CLAIMED IS:

1. A light-emitting apparatus comprising:

a transparent base made of an inorganic material;

a first and a second bonding pad formed on the base;

a GaN semiconductor light-emitting device having a first and a second electrode on one side thereof;

a first and a second wire which connect said first bonding pad to said first electrode and said second bonding pad to said second electrode, respectively;

a transparent adhesive layer which fixes the transparent substrate of said semiconductor light-emitting device to a first surface of said base;

a transparent resin which encapsulates said base, said light-emitting device, said first and second wires, said first and second lead frames, and said adhesive layer,

a first and a second lead frame to which said transparent base is fixed so that the substrate of said semiconductor light-emitting device may face the dominant light emitting direction of said light-emitting apparatus, and said first and second bonding pads being electrically connected to said first and second lead frames, respectively.

2. A light-emitting apparatus according to claim 1, wherein said first bonding pad and said second bonding pad are provided on said first surface of said base, said first lead frame has a first

4 mount facing said dominant light emitting direction, said second lead
5 frame has a second mount facing said dominant light emitting
6 direction, said first bonding pad is fixed onto said first mount with
7 an electrical connection, and said second bonding pad is fixed onto
8 said second mount with an electrical connection.

1 3. A light-emitting apparatus according to claim 1, wherein
2 each of said first and second electrodes is a light-reflecting and
3 electrically conducting metal layer.

1 4. A light-emitting apparatus according to claim 1, wherein
2 said base is made of a material selected from the group consisting
3 of a SiO₂, sapphire and borosilicate glass.

1 5. A light-emitting apparatus according to claim 2, wherein
2 said base is made of a material selected from the group consisting
3 of a SiO₂, sapphire and borosilicate glass.

1 6. A light-emitting apparatus according to claim 3, wherein
2 said base is made of a material selected from the group consisting
3 of a SiO₂, sapphire and borosilicate glass.

1 7. A light-emitting apparatus according to claim 2, wherein
2 said GaN semiconductor light-emitting device is fixed on said first
3 surface of said base between said first and second bonding pads.

1 8. A light-emitting apparatus according to claim 7, wherein
2 said base is rectangular in its plane view.

1 9. A light-emitting apparatus according to claim 7, wherein
2 said first and second bonding pads are formed substantially in
3 parallel with the long side of said first surface.

1 10. A light-emitting apparatus according to any one of claims
2 1 to 9, wherein said base has dispersed therein a fluorescent
3 material.

1 11. A light-emitting apparatus according to any one of claims
2 1 to 9, wherein said base is defined by a plurality of layers, and
3 at least one of said layers contains a fluorescent material.

1 12. A light-emitting apparatus according to claim 10, wherein
2 said base is defined by a plurality of layers, and at least one of
3 said layers contains a fluorescent material.

1 13. A light-emitting apparatus according to claim 1, wherein
2 the first and second bonding pads are formed on a diagonal line of
3 the first surface of the base.

1 14. A semiconductor light-emitting apparatus of flip chip
2 bonding type, comprising:

3 a transparent base made of an inorganic material, which has
4 on one side thereof a first bonding pad and a second bonding pad to
5 be connected to a pair of lead frames with a space between the first
6 and the second bonding pads where a semiconductor light-emitting
7 element is to be fixed.

15. A semiconductor light-emitting apparatus of flip chip
bonding type as claimed in claim 14, wherein the inorganic material
is selected from the group consisting of a SiO_2 , sapphire and
borosilicate glass.

16. A semiconductor light-emitting apparatus of flip chip
bonding type as claimed in claim 14, said transparent base is
rectangular in its plane view.

17. A semiconductor light-emitting apparatus of flip chip
bonding type as claimed in claim 14, wherein the inorganic material
has a fluorescent material dispersed therein.

18. A semiconductor light-emitting apparatus of flip chip
bonding type as claimed in claim 14, said transparent base a plurality
of layers, and at least one of the layers contains a fluorescent
material.

19. A pair of lead frames for use in a light-emitting apparatus of flip chip bonding type comprising:

a transparent base having on a first surface thereof a first and a second bonding pad and

a GaN semiconductor light-emitting device fixed on the first surface thereof,

wherein a first lead frame has a first mount which faces the dominant light emitting direction of the light-emitting apparatus and on which the first bonding pad is to be fixed, and a second lead frame has a second mount which faces the dominant light emitting direction and on which the second bonding pad is to be fixed.

20. A pair of lead frames according to claim 19, wherein the first lead frame has a first projection on which diffused light from the light-emitting device is to be reflected toward the dominant light-emitting direction, and the second lead frame has a second projection on which diffused light from the light-emitting device is to be reflected toward the dominant light-emitting direction.